

IN THE CLAIMS

1.- 44. (Canceled)

45. (Currently amended) A method of boosting the immune system in a subject having an immune system deficiency associated with a tumor or cancer, the method comprising administering, to a subject having an immune system deficiency associated with a tumor or cancer, an immunostimulatory nucleic acid molecule having at least one unmethylated CpG dinucleotide and comprising a nucleotide sequence selected from the group consisting of 5'-purine-purine-cytosine-guanine-pyrimidine-pyrimidine-3'; 5'-purine-TCG-pyrimidine-pyrimidine-3'; and a nucleotide sequence comprising one or more 5'-TCG-3' sequences, wherein the immunostimulatory nucleic acid is longer than 8 nucleotides and is non-palindromic.

46. (Previously presented) The method of claim 45, further comprising administering an antigen associated with a disease selected from the group consisting of a tumor, cancer, a bacterial infection, a viral infection, and a fungal infection.

47. (Previously presented) The method of claim 45, wherein the immunostimulatory nucleic acid molecule is in association with a targeting means, and wherein said association is selected from the group consisting of an ionic bond and a covalent bond.

48.-51. (Canceled)

52. (Canceled)

53.-93. (Canceled)

94. (Previously presented) The method of claim 47, wherein the targeting means is a molecule that binds to a target cell.

95. (Previously presented) The method of claim 94, wherein the target cell is selected from the group consisting of a B-cell, and a natural killer cell.
96. (Previously presented) The method of claim 47, wherein the targeting means is selected from the group consisting of a sterol, a lipid and a target cell specific binding agent.
97. (Previously presented) The method of claim 96, wherein the lipid is selected from the group consisting of a cationic lipid a virosome, and a liposome.
98. (Previously presented) The method of claim 96, wherein the target cell specific binding agent is a ligand recognized by a target cell specific receptor.
99. (Previously presented) The method of claim 47, wherein said immunostimulatory nucleic acid molecule is administered orally.
100. (Previously presented) The method of claim 47, wherein said immunostimulatory nucleic acid molecule is injected.